

# Frogs no more?

By Mary Margaret

THE evening frog chorus from the patches of water in the garden, drains and hiding spots in the foliage of the mango tree reached fever pitch.

I know that we are fortunate and honoured to be serenaded because in many places around the world – North and South America, and Europe – the music is gone or fast disappearing.

Unfortunately, plummeting frog populations is a worldwide phenomena, not limited to gardens but also extending to pristine forest and jungle environments. Scientists have estimated that 170 species frogs have gone extinct and 1,900 species are threatened, a classification that is just below the endangered level.

Amphibians, which include frogs, salamanders and caecilians, co-existed with the dinosaurs, survived that mass extinction, and now according to scientists are facing the same fate as the dinosaurs – mass extinction.

Amphibians – frogs and toads are the most well known – despite their ancient history are delicate creatures. These easily recognisable creatures are featured in children's stories, for example 'The Frog Prince' and cartoons where their fast flicking tongues snap up flies.

The lesser-known members are salamanders and caecilians. Salamanders, which are found in temperate areas, superficially look like little lizards. Caecilians are legless amphibians and little is known about these secretive, hard to find creatures, that burrow through the soil and litter layer of the tropical forests.

Amphibians are commonly referred to as cold-blooded animals as they cannot regulate their body temperature like mammals and birds. Despite living on land and breathing air as adults they are tied to the water in the egg and larval stage.

Amphibian eggs do not have hard shells but are glued together by a mucous-like substance. The egg mass, which resembles

sago pudding, can sometimes be located along the edges of quiet pools or in puddles in the forest floor or even in pitcher plants.

Most amphibians have a larval stage. The metamorphosis, which the tadpoles (frog larvae) go through, is as dramatic as that of the butterflies, even though it is visibly played out. Internal organs evolve; legs form along the side of the body and the tail disappears and then onto land hops a frog.

Amphibians have porous skin that enables the transfer of oxygen and water directly from the air and unlike the urban myth that surrounds them; they are not slimy, but slightly moist. They range in size from tiny pea-sized frogs that live in pitcher plant cups to larger creatures with an equal variety of colour from dark green to lime green, brown, beige, bright red and orange.

Several factors have been identified as contributing to the demise of frogs including pollution, pesticides, habitat loss, climate change, hunting, predators and the pet trade; but the most deadly is a disease – chytrid fungus (*Batrachochytrium dendrobatidis*). It is fatal because the fungus coats the delicate amphibian skin blocking the pores, which are used for water and moisture transfer, thus killing the frog from dehydration and heart failure.

The threat of mass extinction is real and the scientific community has embarked on the US\$300 million Amphibian Ark Project. This project challenges institutions that deal with the natural world, such as zoos,

universities and parks, to develop and care for a minimum 500 amphibians from a single species.

The animals are carefully cleaned to remove the fungus and then live in a fungus-free environment. The hope is to release the saved frogs back into the natural environment. The search is also on to find a cure.

It is ironic, that while frog populations are being decimated around the world, new species are being identified. Dr Indreneil Das, an internationally respected herpetologist, who is a professor of Herpetology at the Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak (Unimas), is leading the search for unidentified species and he has identified several new species, including the smallest, a pea-sized frog from the Microphylla family that inhabits the liquid in the pitcher plant *Nepenthes ampullaria*'s cups.

Save the Frog Day is on April 27 and in conjunction with this international day, Unimas and the Sarawak Forestry Corporation (SFC) are organising the second Frog Race in Sarawak at Kubah National Park in Matang.

The race is on to take digital photographs of frogs in their natural settings with prizes for teams who see the most, take the best photographs and 'capture' the rarest amphibian.

For more information on frogs and the danger they are in go to [www.savethefrogs.com](http://www.savethefrogs.com). Visit the Frog Race website at [www.theboreneanfrograce2013.weebly.com](http://www.theboreneanfrograce2013.weebly.com) and join the exciting Frog Race through this website.



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**BALANCING ACT:** Matang narrow-mouthed frog (*Microhyla nepenthicola*) was once known as micro frog. It is associated with pitcher plants. — Photos by Methos Phang



**STRIKINGLY BEAUTIFUL:** Harlequin tree frog (*Rhacophorus pardalis*) is the most common tree frog found in Kuching.